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EXAMINER

VUONG, QUOCHIE B

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/724,796	Applicant(s) JOHNSON ET AL.	
	Examiner Quochien B. Vuong	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/01/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 12/01/2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-25 are rejected on the ground of nonstatutory double patenting over claims 1-12 of U. S. Patent No. 6,661,999 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

Regarding claim 1 of the present application, claim 1 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including a method for transmitting data communications comprising: receiving an input signal; converting the input signal to a radio frequency data signal; amplifying the radio frequency data signal with an amplifier having an adjustable bias control; detecting a power signal from the radio frequency data signal; converting the power signal to an error signal; amplifying the radio frequency data signal proportionately with the error signal; and transmitting the radio frequency data signal.

Regarding claim 2 of the present application, claim 1 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including the step of modulating the input signal.

Regarding claim 3 of the present application, claim 1 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the step of proportionally amplifying the radio frequency data signal further comprises the step of adjusting a gain control of the amplifier.

Regarding claim 4 of the present application, claim 1 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the step of amplifying the radio frequency data signal further comprises the step of adjusting the bias of the amplifier.

Regarding claim 5 of the present application, claim 1 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the step of converting the input signal comprises the steps of: performing a sequence spread spectrum operation on the input signal resulting in a spread data input signal; and converting the spread data input signal to a radio frequency data signal.

Regarding claim 6 of the present application, claim 1 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the amplifier is an amplifier having an adjustable gain control.

Regarding claim 7 of the present application, claim 1 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the step of amplifying the radio frequency data signal includes amplifying the radio frequency data signal in accordance with a desired output power.

Regarding claim 8 of the present application, claim 2 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including the step of inputting the desired output power level into a digital to analog converter connected to an adjustable gain control of the amplifier to achieve the selection of the desired output power.

Regarding claim 9 of the present application, claim 3 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the sequence spread spectrum operation includes one of a binary phase shift key operation, a complimentary code key operation or a quadrature phase shift key operation.

Regarding claim 10 of the present application, claim 4 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the step of

detecting the power signal includes the step of detecting the power signal with a diode element.

Regarding claim 11 of the present application, claim 5 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the step of converting the power signal to the error signal includes the step of generating at least a portion of the power signal from a printed circuit board coupler.

Regarding claim 12 of the present application, claim 5 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the printed circuit board coupler is a printed circuit board microstrip coupler.

Regarding claim 13 of the present application, claim 6 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the step of proportionately amplifying the radio frequency data signal includes the step of controlling a gain of the amplifier to achieve a substantially constant output transmission power over a temperature range.

Regarding claim 14 of the present application, claim 7 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the step of proportionately amplifying the radio frequency data signal includes the step of generating a desired output transmission power.

Regarding claim 15 of the present application, claim 8 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including an apparatus for transmitting data communications comprising: a receive means adapted for receiving an input signal; a first converting means adapted for converting the input signal to a radio

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frequency data signal; an first amplifying means adapted for amplifying the radio frequency data signal; a detecting means adapted for detecting a power signal from the radio frequency data signal; a second converting means adapted for converting the power signal to an error signal; a second amplifying means adapted for amplifying the radio frequency data signal proportionately with the error signal; and a transmission means adapted for transmitting the radio frequency data signal.

Regarding claim 16 of the present application, claim 8 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the first converting means includes: spreading means adapted for performing a direct sequence spread spectrum operation on the input signal resulting in a spread data input signal; and a third converting means adapted for converting the spread data input signal to a spread radio frequency data signal.

Regarding claim 17 of the present application, claim 8 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the amplifying means includes an amplifier having an adjustable gain control.

Regarding claim 18 of the present application, claim 8 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the second amplifying means includes an amplifier having an adjustable bias current control for selecting a bias current for a desired transmission output power.

Regarding claim 19 of the present application, claim 8 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including a coupler means adapted for coupling transmission power to a radio frequency detector diode element.

Regarding claim 20 of the present application, claim 8 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the second amplifying means includes an adjusting means adapted to adjust a gain control of an amplifier to achieve a substantially constant output transmission power over a selected temperature range.

Regarding claim 21 of the present application, claim 9 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the adjustable gain control is selected by a digital to analog converter connected to the adjustable gain control of the amplifier which corresponds to the desired transmission output power.

Regarding claim 22 of the present application, claim 10 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the spreading means consists of either a binary phase shift key operation, complimentary code keyed operation, or a quadrature phase shift key operation.

Regarding claim 23 of the present application, claim 11 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the detecting means for detecting a power signal is a diode element.

Regarding claim 24 of the present application, claim 12 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the coupler means is a printed circuit board microstrip coupler.

Regarding claim 25 of the present application, claim 8 of U. S. Patent No. 6,661,999 encompasses all the claimed limitations including wherein the output transmission power is substantially constant over a temperature range.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4, 6, 7, 14, 15, 17, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Obara (U.S. 6,526,266).

Regarding claim 1, Obara discloses a method for transmitting data communications (figure 6) comprising: receiving an input signal; converting the input signal to a radio frequency data signal (inherently in order to feed the signal to the modulation unit 33); amplifying the radio frequency data signal with an amplifier having an adjustable bias control (27); detecting a power signal from the radio frequency data signal (26); converting the power signal to an error signal (28, 31, 32, and 39); amplifying the radio frequency data signal proportionately with the error signal (30); and transmitting the radio frequency data signal (24) (column 9, line 65 – column 10, line 62).

Regarding claim 2, Obara discloses the step of modulating the input signal (see figure 6, modulation 33).

Regarding claim 3, Obara discloses wherein the step of proportionally amplifying the radio frequency data signal further comprises the step of adjusting a gain control of the amplifier (see figure 6, gain variable means 30).

Regarding claim 4, Obara discloses wherein the step of amplifying the radio frequency data signal further comprises the step of adjusting the bias of the amplifier (figure 6, gate bias generation 37).

Regarding claim 6, Obara discloses wherein the amplifier is an amplifier having an adjustable gain control (figure 6, gain variable means 30).

Regarding claim 7, Obara discloses wherein the step of amplifying the radio frequency data signal includes amplifying the radio frequency data signal in accordance with a desired output power (figure 6, column 6, line 65 – column 10, line 62).

Regarding claim 14, Obara discloses wherein the step of proportionately amplifying the radio frequency data signal includes the step of generating a desired output transmission power (figure 6, column 9, line 65 – column 10, line 44).

Regarding claim 15, Obara discloses an apparatus (figure 6) for transmitting data communications comprising: a receive means adapted for receiving an input signal; a first converting means adapted for converting the input signal to a radio frequency data signal (inherently in order to feed the signal to the modulation unit 33); a first amplifying means adapted for amplifying the radio frequency data signal (27); a detecting means (26) adapted for detecting a power signal from the radio frequency data signal; a

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second converting means adapted for converting the power signal to an error signal (28, 31, 32, and 39); a second amplifying means (30) adapted for amplifying the radio frequency data signal proportionately with the error signal; and a transmission means adapted for transmitting the radio frequency data signal (24) (column 9, line 65 – column 10, line 62).

Regarding claim 17, Obara discloses wherein the amplifying means includes an amplifier having an adjustable gain control (figure 6, gain variable means 30).

Regarding claim 18, Obara discloses wherein the second amplifying means includes an amplifier having an adjustable bias current control for selecting a bias current for a desired transmission output power (figure 6, gate bias generation 37).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 8, 10-12, 19, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obara.

Regarding claim 8, Obara discloses the method of claim 7 above. Obara does not specifically disclose the step of inputting the desired output power level into a digital to analog converter connected to an adjustable gain control of the amplifier to achieve the selection of the desired output power. However, the examiner takes Official notice that it is well known in the art to use a digital to analog converter for converting the gain control from digital to analog. Therefore, it would have been obvious to adapt the well known digital to analog converter to the method of Obara for converting the gain control from digital to analog in order to adjust the gain of the amplifier.

Regarding claim 10, Obara discloses the method of claim 1 above. Obara does not specifically disclose wherein the step of detecting the power signal includes the step of detecting the power signal with a diode element. However, the examiner takes Official notice that it is well known in the art to use a diode element for detecting the signal. Therefore, it would have been obvious to adapt the well known diode detecting element to the detector 26 of the method of Obara for detecting the signal.

Regarding claims 11 and 12, Obara discloses the method of claim 1 above. Obara does not specifically disclose wherein the step of converting the power signal to the error signal includes the step of generating at least a portion of the power signal from a printed circuit board coupler and wherein the printed circuit board coupler is a

printed board microstrip coupler. However, the examiner takes Official notice that it is well known in the art to use a printed board microstrip coupler for coupling. Therefore, it would have been obvious to adapt the well known printed board microstrip coupler to the coupler 25 of the method of Obara for coupling the signal.

Regarding claim 19, Obara discloses the apparatus of claim 15 above. In addition, Obara discloses a coupler means (25) adapted for coupling transmission power to a radio frequency detector element (26). Obara does not specifically disclose the detector is a diode element. However, the examiner takes Official notice that it is well known in the art to use a diode element for detecting the signal. Therefore, it would have been obvious to adapt the well known diode detecting element to the detector 26 of the apparatus of Obara for detecting the signal.

Regarding claim 23, Obara discloses the apparatus of claim 15 above. Obara does not specifically disclose the detector is a diode element. However, the examiner takes Official notice that it is well known in the art to use a diode element for detecting the signal. Therefore, it would have been obvious to adapt the well known diode detecting element to the detector 26 of the apparatus of Obara for detecting the signal.

Regarding claim 24, Obara does not specifically disclose wherein the coupler means is a printed circuit board microstrip coupler. However, the examiner takes Official notice that it is well known in the art to use a printed board microstrip coupler for coupling. Therefore, it would have been obvious to adapt the well known printed board microstrip coupler to the coupler 25 of the apparatus of Obara for coupling the signal.

9. Claims 5, 9, 16, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obara in view of Nomura (US 6,272,125).

Regarding claims 5 and 16, Obara discloses the method and apparatus of claims 1 and 15 above, respectively. Obara does not specifically disclose wherein the step of converting the input signal comprises the steps of: performing a sequence spread spectrum operation on the input signal resulting in a spread data input signal; and converting the spread data input signal to a radio frequency data signal. However, Nomura discloses performing a sequence spread spectrum operation on the input signal resulting in a spread data input signal; and converting the spread data input signal to a radio frequency data signal (figure 1; column 4, line 46 – column 5, line 31). Therefore, it would have been obvious to adapt the teaching of Nomura to the method and apparatus of Obara in order to increase the bandwidth and reduce interference.

Regarding claims 9 and 22, Obara and Nomura do not disclose wherein the sequence spread spectrum operation includes one of a binary phase shift key operation, a complimentary code key operation or a quadrature phase shift key operation. However, the examiner takes Official notice that sequence spread spectrum operation includes one of a binary phase shift key operation, a complimentary code key operation or a quadrature phase shift key operation is well known in the art. Therefore, it would have been obvious to use one of a binary phase shift key operation, a complimentary code key operation or a quadrature phase shift key operation in the sequence spread spectrum of Obara and Nomura as one would like to select a desired operation for performing the same function as the sequence spread spectrum operation.

10. Claims 13, 20, 21, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obara in view of Nauta et al. (US 6,084,473).

Regarding claims 13, 20 and 25, Obara disclose the method and apparatus of claims 1 and 15 above, respectively. Obara does not disclose wherein the step of proportionately amplifying the radio frequency data signal includes the step of controlling a gain of the amplifier to achieve a substantially constant output transmission power over a temperature range. However, Nauta et al. disclose amplifying a data signal includes the step of controlling a gain of the amplifier to achieve a substantially constant output transmission power over a temperature range (column 1, line 34-39). Therefore it would have been obvious to adapt the teaching of Nauta et al. to the method and apparatus of Obara in order to keep the substantially constant output transmission power over a temperature range.

Regarding claim 21, Obara and Nauta do not specifically disclose wherein the adjustable gain control is selected by a digital to analog converter connected to an adjustable gain control of the amplifier to achieve the selection of the desired output power. However, the examiner takes Official notice that it is well known in the art to use a digital to analog converter for converting the gain control from digital to analog. Therefore, it would have been obvious to adapt the well known digital to analog converter to the apparatus of Obara and Nauta et al. for converting the gain control from digital to analog in order to adjust the gain of the amplifier.

Conclusion

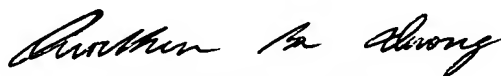
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tichauer (US 6,362,690) disclose system and method for closed loop VSWR correction and tuning in RF power amplifiers.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quochien B. Vuong whose telephone number is (571) 272-7902. The examiner can normally be reached on M-F 9:30-18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



QUOCHIE B. VUONG
PRIMARY EXAMINER

Quochien B. Vuong
July 08, 2006.